immobilized mixture thereof in amounts effective to increase the frequency of cellular transduction by the retrovirus.

Another preferred embodiment of the invention provides an improved method for cellular grafting. The method includes the steps of obtaining viable hematopoietic cells from an animal donor; infecting the hematopoietic cells with a recombinant retrovirus vector to produce transduced viable hematopoietic cells, the infecting being in the presence of fibronectin and/or a fragment thereof in immobilized form and effective to increase the frequency of transduction; and introducing the transduced viable hematopoietic cells into an animal recipient as a cellular graft. In one preferred mode the infected cells can be introduced into an autologous donor.

Another preferred embodiment of the present invention provides a method for obtaining transduced umbilical cord blood cells suitable for a cellular engraftment procedure. The method includes infecting hematopoietic cells from umbilical cord blood with a replication-defective recombinant retrovirus vector in the presence of an effective immobilized amount of fibronectin and/or fibronectin fragments to increase the frequency of transduction of the hematopoietic cells by the retrovirus vector. The invention also includes viable transduced cellular populations from umbilical cord blood obtainable by such a method, and cellular grafting methods